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**Declarations under Rule 4.17:**

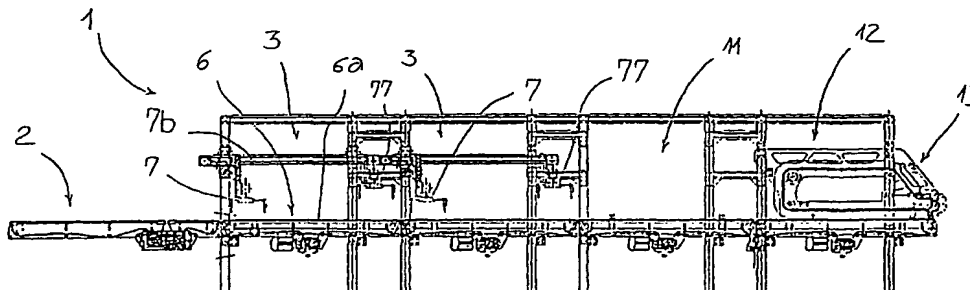
- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for the following designation US
- of inventorship (Rule 4.17(iv)) for US only

**Published:**

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

[Continued on next page]

(54) Title: **METHOD AND APPARATUS FOR ARRANGING AND ORIENTING PACKAGES**



(57) Abstract: An apparatus (1) for sorting packages, comprising means (2) for supplying the packages to at least a station (3) for their manipulation and orientation, which is characterised in that the manipulating station (3) comprises at least a manipulator head (7) having at least two degrees of freedom of motion. In particular, the manipulator head (7) is movable by translation according to the axis of an orthogonal Cartesian triad and is movable by rotation about a substantially vertical axis. A method for putting in step packages conveyed by conveyor belts set side by side including varying the speed of said belts.

WO 2004/039705 A1



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*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

# INTERNATIONAL SEARCH REPORT

International Application No.  
PCT/IT 03/00452

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 B65G47/08 B65G47/26

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 B65G B25J

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 99/28057 A (NAGLER PETER) 10 June 1999 (1999-06-10) page 7, line 19 - line 22 page 9, paragraph 3 page 12, line 29 - line 33 page 14 claim 1; figure 2	1-4, 8
X	US 4 242 025 A (THIBAUT JACQUES G) 30 December 1980 (1980-12-30) column 1, line 53 - column 2, line 14; figure 1	1-4
Y	----- -/-	5

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

### \* Special categories of cited documents:

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the International filing date
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- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the International filing date but later than the priority date claimed

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- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- \*G\* document member of the same patent family

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1 March 2004

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	PATENT ABSTRACTS OF JAPAN vol. 013, no. 528 (M-898), 24 November 1989 (1989-11-24) -& JP 01 216788 A (TOSHIBA CORP; OTHERS: 01), 30 August 1989 (1989-08-30) abstract -----	5
X	US 5 687 831 A (CARLISLE BRIAN R) 18 November 1997 (1997-11-18) column 4, line 30 - line 43 column 7, line 31 - line 43 figures 3-7 -----	1-4
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A	US 4 016 788 A (HARDY PETER D) 12 April 1977 (1977-04-12) column 1, line 23 - line 54 column 3, line 28 - line 60; figures 1-3 -----	6,7,9,10
A	EP 0 259 733 A (BAHLENS KEKSFABRIK) 16 March 1988 (1988-03-16) column 2, line 33 - column 3, line 36; figures 1,2 -----	6,7,9,10

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/IT 03/00452

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

see additional sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

**FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210**

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1, 2-5, 8

An apparatus for manipulating packages.

1.1. claims: 1, 5

An apparatus for manipulating packages in accordance with claim 1 wherein the manipulator head comprises gripping means as defined by claim 5.

1.2. claims: 1, 8

An apparatus comprising a plurality of manipulating stations in accordance with claim 8 as dependent on claim 1.

2. claims: 1, 6, 7, 9, 10

Method and apparatus involving a pair of conveyor belts, specifically for putting packages in step.

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/IT 03/00452

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